CHAPTER 2.0 - HORN NOISE

2.1 OVERVIEW

As explained in more detail in the Draft SEIS,[1] SEA determined early in the EIS process that the construction and operation of the proposed project had the potential, in certain areas, to result in significant adverse impacts as a result of increases in train-generated noise. SEA's review showed that these impacts would result from both wayside noise—locomotive engines and wheel/rail noise—and horn noise—noise from locomotive horns when trains approach grade crossing locations to warn motorists and pedestrians of the on coming train.

For the EIS, SEA conducted a thorough analysis of noise, measuring actual noise readings along the existing rail line that included both wayside and horn noise. The number of noise sensitive receptors (homes, schools, churches, libraries, hospitals, etc.) along the alternatives proposed for new construction, as well as the entire existing DM&E mainline proposed for rehabilitation to support movement of unit coal trains, and the alternative alignments proposed by some communities to avoid use of the existing line through certain cities that could be exposed to adverse levels of noise, were evaluated. Furthermore, SEA studied the potential adverse noise impacts of three potential operating scenarios (20, 50, and 100 million tons of coal transported annually by DM&E). SEA's noise methodology is explained in detail in the Draft EIS, Appendix F - Noise and Vibration. Following its analysis, SEA determined that project construction and operation could result in significant noise impacts, particularly from the increased traffic that would result on the existing line proposed for rehabilitation (from an average of 3 trains per day to as many as 37 trains per day).

[1] Draft SEIS, Chapter 2 at pages 2-1 to 2-7.

This is an approximately 900-mile project—roughly 300 miles of new rail construction and approximately 600 miles of rehabilitation and increased use of existing rail line. Given the broad geographic scope of the project, SEA determined that hundreds of noise sensitive receptors could be exposed to adverse levels of wayside noise and that thousands of noise sensitive receptors could be exposed to adverse levels of noise from horn soundings. SEA proposed a variety of mitigation measures to address potential noise impacts should the project be approved, all of which the Board imposed in its 2002 Decision.

A complete list of the Board's noise mitigation can be found in the Executive Summary to this Final SEIS. Specifically, consistent with prior Board approaches, the Board's noise mitigation (see condition Number 95) addressed noise sensitive receptors, at various levels of rail traffic, that would be exposed to L_{dn} levels of 70 dBA and higher as a result of wayside noise generated by this project.[2] In the course of the environmental review, DM&E submitted negotiated agreements it had executed with 51 of the 56 affected communities on its existing line, setting forth mutually satisfactory measures for addressing potential environmental impacts on those communities and other issues of local concern. Condition Number 120 required DM&E to comply with all negotiated agreements developed with local communities.

Two additional conditions (numbers 86 and 88) addressed construction noise and detailed how DM&E must minimize noise and vibration impacts during rail line construction and rehabilitation activities. Other conditions (numbers 92 and 94) addressed rail design and the use of construction materials to eliminate or minimize certain types of rail noise through appropriate rail line design. The

[2] "dBA" refers to decibels of noise on an A-weighted scale (noise audible to the human ear). "L_{dn}" means average noise exposure over a 24-hour period, typically weighting the night-time noise more heavily. Here, each night-time train was counted as the equivalent of 10 daytime trains.

Board also included four measures associated with railroad maintenance (numbers 87, 91, 93, and 96) to minimize wheel, rail, and engine exhaust noise.

With respect to horn noise, the Board imposed one condition (Number 90) requiring DM&E to consult with interested communities along both the new and existing rail line to identify measures, consistent with FRA standards, to eliminate the need to sound train horns.[3] Another condition (Number 89) required compliance with established noise limits, including those for locomotive horns, for train operations. SEA declined to develop its own mitigation addressing such issues as when horns could be sounded, horn volume, and the duration time of the horn blast in the EIS, citing safety concerns. SEA was aware that FRA, the agency with primary expertise in matters involving railroad safety, had recently proposed nation wide standards for horn soundings that would include standards for establishing "quiet zones" (areas where horns do not have to be sounded). While the FRA regulations were not finalized at the time the Final EIS was prepared, SEA expected that the final rule would be available prior to full operation of the proposed project.

SEA also anticipated that other conditions recommended in the Final EIS would reduce horn noise. For example, conditions 1, 121, 123, 129, 138, and 144 provide for up-graded and more advanced crossing protection devices, which would indirectly assist communities in the potential establishment of quiet zones. The two grade separations required in Rochester, Minnesota and in Pierre, South Dakota (see condition numbers 121 and 138) were expected to reduce or eliminate the need for horn soundings in those locations.

[3] The Board imposed that condition because it was aware, during the EIS process, that FRA was in the process of establishing standards for train horn soundings that would include standards for establishing quiet zones.

On judicial review of the Board's 2002 Decision in Mid States, the court affirmed SEA's noise methodology and the results it produced,[4] and those issues are not part of this proceeding on remand. However, the court found that SEA had not adequately explained why mitigation for horn noise, such as insulation treatments, had not been recommended.[5] While the court specifically stated that is was not requiring the Board on remand to mitigate horn noise,[6] the court directed the Board on remand to consider if there were any viable mitigation options not involving limitations on the use of horns, such as insulation treatments, and to better explain its course of reasoning for not imposing horn noise mitigation.

2.2 SEA'S ADDITIONAL REVIEW FOR THE DRAFT SEIS

In response to the court's decision in Mid States, SEA re-examined the issue of mitigation for horn noise, focusing on the court's directive that the Board consider if there were any viable mitigation alternatives that would not involve limitations on the use of horns, such as insulations treatments. The Draft SEIS explained in detail why SEA again determined that horn noise mitigation in this case would not be appropriate.[7]

At the outset, SEA stated in the Draft SEIS that it considers safety to be of paramount importance when evaluating rail projects and potential mitigation. SEA explained that it is well documented that train horn soundings play a vital role in protecting vehicles and pedestrians at grade crossings. By way of background, SEA noted that, in recent years, FRA has reported in several different studies that discontinuance of horn sounding at grade crossings results in dramatic increases in

[4] 345 F.3d at 534-37.
[5] Id., at 536.
[6] Id.

train-vehicle accidents. In fact, FRA ended whistle bans in Florida by emergency order on July 26, 1991, in response to the increase in collisions at whistle ban crossings.[8]

SEA further explained that, recognizing the importance of safety at rail/vehicle grade crossings and potential concerns regarding horn sounding and quiet zones, Congress had directed FRA to develop and issue regulations requiring the use of locomotive horns at public grade crossings. In doing so, Congress also provided FRA with authority to allow exceptions to the horn sounding requirement. SEA detailed that, on December 18, 2003, FRA published its Use of Locomotive Horns at Highway-Rail Grade Crossings; Interim Final Rule).[9] (The Interim Rule was to become effective on December 18, 2004, but its effective date was postponed by FRA several times in order that the provisions in Final Rule, issued on April 27, 2005 and effective on June 24, 2005, would be the only provisions that became effective.) The Interim Rule set out requirements for locomotive horn soundings while a train is approaching and entering a public highway-rail crossing. It mandated the sounding of locomotive horns at public grade crossings and established guidelines for those soundings on such issues as volume of horn, sounding time, and sounding distance from a grade crossing.

As SEA noted, an important part of the Interim Rule is the establishment of conditions under which locomotive horn soundings can be eliminated without compromising safety. Under the Interim Rule, horn sounding can be eliminated where there is not a significant risk of loss of life or serious personal injury, use of locomotive horns is impractical, or safety measures fully compensate for the absence of the warning provided by the horns.

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[7] Draft SEIS, Chapter 2, at pages 2-14 to 2-15.

[8] Before adopting new quiet zone regulations that allow safe quiet zones, FRA evaluated experience with horn-free crossings in Florida and determined that train/vehicle accidents increased between 195% and 500% at crossings where horn soundings were banned. See Draft EIS, Chapter 3 at page 3.2-61.

[9] 49 CFR, Parts 222 and 229.

Thus, SEA pointed out that the Interim Rule gave communities an established process under which they could work with FRA to eliminate locomotive horn soundings and develop quiet zones, when appropriate. Because FRA approval was required for any elimination of locomotive horn soundings under the Interim Rule, SEA preliminarily determined in the Draft SEIS that any attempt by the Board to allow for the elimination of locomotive horn soundings, address the level of horn sound, how long the horn should be sounded, or establish quiet zones would be inappropriate. SEA also noted that some 51 voluntary negotiated community agreements are in place in this case to address community issues.

2.3 CONCLUSIONS OF THE DRAFT SEIS

SEA set forth in detail in the Draft SEIS the reasons for its preliminary conclusion that additional mitigation for horn noise soundings, including mitigation such as insulation treatments, at the noise receptor locations, or sound walls, would be neither reasonable nor warranted. SEA based its decision on the following:

- Safety is of paramount importance to SEA and the Board.
- Train horn soundings are a safety issue regulated by FRA.
- FRA's Interim Rule establishing train horn sounding regulations and procedures to establish quiet zones now provided all of the communities affected by this project the opportunity to eliminate or reduce train horn soundings without compromising safety so that it would not be appropriate for the Board to impose any measures adopting its own standards for when locomotive horn soundings should take place.

- Numerous agreements negotiated between communities along the existing rail line and DM&E are in place to address the concerns of the local communities along the new and existing line.
- The fact that the Board has never imposed mitigation for horn (as opposed to wayside) noise, so that doing so here would depart from the Board's consistent approach, in rail merger and construction cases, of only mitigating wayside noise.
- The broad geographic scope of this 900-mile project (including both the new and existing line) and the large number of potential receptors, which would make it extremely costly to require DM&E to mitigate the thousands of sensitive noise receptors potentially affected by horn noise by means such as insulation, sound barriers, or air conditioning to reduce the need to open windows for ventilation.[10]

[10] Potentially, many thousands of noise sensitive receptors could be exposed to adverse noise levels as a result of horn soundings from DM&E coal trains. Based on its analysis for the Draft EIS, SEA determined that 8,943 noise sensitive receptors in Minnesota and 3,945 noise sensitive receptors in South Dakota (a total of 12,888) would experience noise levels of 70 dBA L_{dn} due to horn soundings at the full projected 100-million-ton level of rail transport. Of these, 4,352, or 34 percent, would be in the 5 communities without negotiated agreements. SEA estimated a cost of $1,000 to $4,000 per noise sensitive receptor to achieve a 5-10 dBA noise reduction (Final EIS, Chapter 12, Attachment C). At this cost, to mitigate for all noise sensitive receptors experiencing 70 dBA L_{dn} due to horn noise in communities without negotiated agreements would cost $4.3 to $17.4 million.

For the Draft SEIS, SEA also investigated the potential cost of the construction of sound walls along portions of the existing line bordered by adjacent residential areas. Rochester, in comments submitted to SEA dated January 6, 1999, had contemplated construction of sound barriers along the existing rail line through Rochester and other neighboring communities. At that time, Rochester estimated that approximately 12,600 feet of sound wall along both sides of the rail line (25,200 total linear feet), 20 feet tall, would be required to address potential rail noise issues in Rochester. At an estimated cost of $230 per linear foot (based on 1999 cost estimates), sound walls in Rochester alone would cost approximately $5.8 million. As the Draft SEIS explains, in SEA's view, a strong argument can be made that imposing this additional cost would unreasonably burden the project, given the already high cost of the existing environmental mitigation (estimated to be between $103 and $140 million dollars or about 10 percent of this

- Sound barriers, particularly on both sides of the rail line, would themselves create potential safety hazards.
- Sound barriers might not be effective. Sound barriers do not eliminate noise. Unlike acoustical surfaces capable of absorbing noise, outside sound wall barriers generally must be hard, impermeable surfaces to withstand weather and have the structural stability to extend 20 feet or more into the air. These structures reduce noise levels by absorbing sound waves or deflecting sound waves, which in this case would be deflected back into the corridor between the barriers or potentially over the top of the barriers. However, numerous road crossings in Rochester and the other communities at issue here would create openings in the barriers, which would allow sound to escape.
- The installation of grade crossing improvements and the grade separated crossings that would be required in Rochester and Pierre under the Board's current mitigation would reduce horn noise to some extent.
- The EIS indicated that many of the noise sensitive receptor locations with substantial horn noise also would experience wayside noise levels of L_{dn} 70 dBA or higher. Thus, these locations would already benefit from the Board's noise mitigation.
- The record here makes it clear that DM&E would not reach its full operational level of 100 million tons of annual coal transportation for several years after coal operations begin. Moreover, several alternative interchange locations along DM&E's existing system would allow interchange of coal traffic with other carriers at a variety of points so that, even at the full 100-million-ton level, some communities, especially those further east, might never experience the full level of 37 trains per day and associated levels of noise, including horn noise.

$1.4 billion project).

- In many locations, sound barriers would have to be constructed along the backyards of adjacent residences. These walls would create a significant permanent visual component in these areas. Maintenance and potential vandalism (particularly graffiti) also would create ongoing concerns and cost issues for DM&E, the community, and adjacent residents.
- Portions of an existing bike/walking trail in Rochester would likely have to be relocated onto property adjacent to the rail right-of-way to avoid a trail located between sound barrier walls.
- Sound barriers would also create significant visual obstructions to motorists and locomotive engineers when approaching grade crossings, preventing motorists from seeing approaching trains and engineers from seeing traffic at grade crossings until nearly at the crossing, which could increase the likelihood of a collision.

2.4 SUMMARY OF HORN NOISE COMMENTS ON THE DRAFT SEIS

SEA received 14 comments on its additional discussion in the Draft SEIS of horn noise and whether to recommend potential horn noise mitigation. Commenters included the Minnesota Department of Transportation (MNDOT), City of Rochester (Rochester), Olmsted County, Mayo Clinic (Mayo), Rochester Area Chamber of Commerce, Eastside Pioneer Neighborhood Association, and eight citizens. The comments fall into one or more of the following general topic areas:

- General concerns.
- Quiet zones.
- Negotiated agreements.
- Grade separations.

- Sound walls.
- Property values.
- IMRL routing.
- Environmental Justice.
- Past precedent.

The following provides a summary of the content of the comments received in each of these categories and SEA's Response. These comments are also included and responded to individually in Appendix A.

2.4.1 General Concerns

Essentially, all of the comments on horn noise raised concerns about the potential adverse impacts of increased train-generated noise, particularly in Rochester and Chester, Minnesota, as a result of the proposed project. Similar to the comments SEA has received throughout the EIS process, these comments cited increased noise as a reason for commenters' opposition to the project, or requested mitigation in addition to the noise mitigation—11 conditions in all, primarily addressing wayside noise—recommended in the Final EIS and imposed by the Board in the 2002 Decision.

SEA has carefully reviewed all of the comments and appreciates these commenters' participation in the environmental review process. SEA recognizes that the proposed project would likely have significant adverse impacts in the area of horn noise. But for the reasons explained below, the commenters have not shown that the impacts of horn noise resulting from increased train traffic in Rochester (or Chester) would be so unique that the Board should depart in this case from its long-standing practice of not imposing horn noise mitigation. Nor does SEA recommend that the Board require DM&E to establish (or pay for) one or more quiet zones. At the same time, as discussed in more detail below, SEA encourages all communities potentially concerned about horn noise as a result

of this project to pursue the establishment of one or more quiet zones, in accordance with FRA's Final Rule, which became effective in June 2005 and is discussed in more detail below. SEA believes that the opportunity to establish quiet zones under FRA's established processs represents the appropriate way for Rochester, Chester, and any other communities concerned about horn noise to reduce horn noise related to this project without compromising safety. (To facilitate this, SEA is recommending that the Board revise its Community Liaison condition (Number 29) to specifically require DM&E's Community Liaison to assist communities or other entities interested in establishing quiet zones.)[11] Alternatively, affected communities or other entities can seek to enter into a voluntary negotiated agreement with DM&E that could include a mutually acceptable plan for establishing and/or funding one or more quiet zones.

2.4.2 Quiet Zones

As previously noted, FRA's Interim Rule was to become effective on December 18, 2004.[12] Accordingly, in the Draft SEIS, SEA indicated that the Interim Rule provided a process for communities, like Rochester, that are concerned about horn noise from trains to establish quiet zones without compromising safety. The Interim Rule was a key reason for SEA's decision not to recommend additional mitigation for horn noise in the Draft SEIS.

Mayo commented that FRA's requirement for horn soundings at all grade crossings would lead to continuous horn sounding by trains passing through Rochester due to the number and proximity of grade crossings.[13] Olmsted County, Rochester, and Mayo also raised concerns about SEA's reliance

[11] SEA's final recommended language can be found below in this chapter and in the list of conditions in the Executive Summary to this Final SEIS.

[12] FRA's Use of Locomotive Horns at Highway-Rail Grade Crossings: Final Rule, was published on April 27, 2005. Because SEA's Draft SEIS was issued on April 15, 2005, the specifics of FRA's Final Rule could not be considered in the Draft SEIS. However, the contents of FRA's Final Rule were reviewed and incorporated into this Final SEIS as appropriate.

[13] Train horn soundings at road grade crossings are required by Minnesota State law.

on FRA's Interim Rule. These commenters generally took the position that SEA should determine the potential cost to establish quiet zones through Rochester, compare these costs to other potential horn noise mitigation measures, such as building insulation and sound walls, and include these costs as part of its evaluation of whether to recommend specific horn noise mitigation. Additionally, the commenters suggested that SEA should further evaluate the potential adverse impacts of establishing quiet zones and whether DM&E should be required to pay for implementation of supplementary safety measures (SSMs), like four-quadrant gates, that would be needed to establish quiet zones under FRA's rule. Commenters indicated that SSMs would be expensive and that SEA should require, as mitigation, that DM&E pay for them. Mayo further raised concerns that FRA's requirements for quiet zones would increase the problem of delays for emergency medical service (EMS) vehicles and traffic.[14] One citizen expressed concern for safety if quiet zones were established and horn soundings were no longer required.

In response to these comments, SEA has done additional research into the quiet zone issue, including review of FRA's Final Rule. What SEA has learned is discussed below.

As background, FRA's Use of Locomotive Horns at Highway-Rail Grade Crossings: Final Rule, which makes minor changes to, and supercedes the Interim Rule, was published on April 27, 2005 and took effect on June 24, 2005.[15] Therefore, FRA's Final Rule now provides a safe and effective way for communities potentially affected by horn noise from this project, including Rochester and Chester, to eliminate or reduce train horn soundings without compromising safety.

[14] SEA does not see how preventing EMS vehicles from entering a grade crossing during a train passing event, when they would be stopped anyway, would result in greater delay, because protections such as new gates would deploy in similar timing and fashion as standard gates, which are already in place at many of the grade crossings in Rochester. Additionally, SEA recommended, and the Board imposed, a condition requiring the construction of two grade separated crossings to facilitate movement of EMS vehicles in Rochester.

[15] However, pursuant to FRA's direction, communities and other public authorities could begin submitting documentation for establishment of quiet zones 30 days from the publication of the Final Rule.

In preparing this Final SEIS, SEA consulted informally with FRA[16] regarding the Final Rule and FRA's experience regarding the establishment of quiet zones. FRA indicated to SEA that communities that had established whistle bans in the past and those pursuing the establishment of quiet zones with FRA, under the Final Rule, vary widely in size, geographic area, and amount of rail traffic. The communities that are working with FRA include smaller suburban communities, such as Medina, Minnesota, and major urban areas such as Chicago, Illinois, and Irving, Texas. Currently, communities in 26 states are coordinating with FRA to establish or maintain quiet zones. The rail traffic in these communities ranges from 5 trains per day to 30-40 trains per day. These trains include both freight and commuter trains.

FRA indicated that, prior to issuance of the Final Rule, 2,027 existing rail-highway grade crossings in 24 states were subject to whistle bans.[17] The communities with whistle ban zones at the time of release of the Final Rule currently are coordinating with FRA to implement appropriate SSMs and submit the necessary documentation to FRA to maintain their existing quiet zones.[18] In addition, numerous other communities that were working toward or considering establishing whistle bans, but for which whistle bans had not yet been implemented at the time FRA's Final Rule became effective, have been working with FRA in pursuit of establishing quiet zones. To date, 25 additional communities have approached FRA seeking to establish quiet zones.

[16] Ron Ries, Federal Railroad Administration, Office of Safety, telephone discussions in August and October 2005.

[17] See Final Environmental Impact Statement – Interim Final Rule for the use of Locomotive Horns at Highway-Rail Grade Crossing. December 2003, available on-line at www.fra.dot.gov.

[18] Currently, four whistle bans are in place in Minnesota and are in the process of becoming quiet zones under FRA's Final Rule. All these are located in the Minneapolis–St. Paul area and include Coon Rapids (along a BNSF rail line), and Brooklyn Center, Medina, and Vadnais Heights (along a Soo Line–Canadian Pacific Railway rail line).

As previously noted, Olmsted County and Rochester commented that SEA should evaluate the cost to establish a quiet zone through Rochester, compare this cost to that of other potential mitigation for horn noise, and determine whether DM&E should be required to pay for measures necessary to establish quiet zones in Rochester and Chester (a community located east of Rochester through which DM&E's existing line currently passes that, like Rochester, does not have a negotiated agreement with DM&E). In response to Olmsted County and Rochester's comments, SEA has developed for this Final SEIS (as presented below) an estimate of costs for establishment of SSMs at grade crossings in Rochester and Chester that would likely assist these communities in obtaining approval from FRA for a quiet zone through the community. SEA has also prepared estimates comparing the cost of establishing a quiet zone to other mitigation measures that potentially could be used to mitigate horn noise.

In developing its cost estimates for this Final SEIS, SEA identified the potential grade crossings at which SSMs likely would be required in Rochester and Chester and the potential cost to install SSMs. For purposes of its analysis, SEA developed potential cost estimates to up-grade the crossing protection at all of the identified grade crossings from the existing crossing protection to 4-quadrant gates. FRA has indicated that implementation of some SSMs, including 4-quadrant gates or traffic channeling devices (such as median barriers) are generally necessary for implementation of quiet zones.[19] In special circumstances, a variety of alternative safety measures (ASMs) may also be used to compensate for the lack of horn soundings. However, SSM would generally be the means to satisfy FRA's requirements for quiet zones.

Four-quadrant gates generally include two sets of flashing lights, one on each side of the track directed to oncoming traffic, and four gates, two on each side of the crossing arranged to obstruct all lanes of traffic and prevent vehicles from driving into the lane of oncoming traffic to drive around a single

gate and enter or cross the intersection. Four-quadrant gates are timed such that the gates for the traffic lanes approaching the crossing deploy first, stopping on coming traffic. Gates blocking traffic lanes carrying traffic away from the crossing deploy a few seconds later to allow any vehicles in the intersection when the gates deploy time to exit the crossing before it is blocked by the gates.

Costs for SSMs and ASMs vary widely. However, installation of 4-quadrant gates would generally be the most expensive SSM, as well as the most effective measure (short of actually closing the crossing) to assist a community with meeting FRA's requirements for a quiet zone—reduction of the "Quiet Zone Risk Index" to levels at or below the "Nationwide Significant Risk Threshold" and the "Risk Index With Horns."[20] SEA determined as part of its additional analysis for the Final SEIS that should SSMs and ASMs be installed in Rochester and Chester, some combination of the protections available would likely be used. Therefore, SEA determined that the estimated costs for installation of 4-quadrant gates for grade crossings in Rochester and Chester, discussed below, would provide a conservative, likely upper end, cost for implementation of a quiet zone.

In the EIS, SEA identified 27 grade crossings along the existing DM&E rail line through Rochester and Chester. These included all the grade crossings from County Road 7 east of Eyota, through Chester, Rochester, and Byron to Township Road 202 (19th Avenue). The EIS stated that existing crossing protections along this section of DM&E's existing line included 7 crossings with flashing lights and gates, 13 crossings with flashing lights, and 7 crossings with passive protection (crossbucks, stop signs).

[19] 49 CFR § 222.39. How Is a Quiet Zone Established?

[20] See Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule, Appendix C to Part 222—Guide to Establishing Quiet Zones, Section I—Overview and Appendix D to Part 222—Determining Risk Levels for

In response to the comments on the Draft SEIS, SEA has estimated the cost to upgrade all these crossings to 4-quadrant gates, based on mitigation cost estimates in the Final EIS in this proceeding.[21] The Final EIS projected costs for upgrades from:

- Crossbucks to flashing lights plus 2-quadrant gates - $126,450
- Flashing lights to flashing lights plus 2-quadrant gates - $22,500.

As shown, these costs included only upgrades to 2-quadrant gates, or the traditional arrangement of flashing lights and gates. Because 2-quadrant gates would not likely meet FRA's requirement for a quiet zone, SEA has now doubled the original estimated cost for upgrades in the Final EIS to estimate the cost for upgrading the existing crossings to 4-quadrant gates. Under this approach, these costs would be:

- Crossbucks to flashing lights plus 4-quadrant gates - $252,900
- Flashing lights to flashing lights plus 4-quadrant gates - $45,000
- 2-quadrant gates to 4-quadrant gates - $22,500. [22]

Based on these estimates for crossing protection upgrades, SEA estimates that the total cost of installing 4-quadrant gates at each of the grade crossings along this section of rail line (including grade crossings in Rochester and Chester) to be approximately $2.5 million.[23]

Information on Calculating Risk Levels.

[21] Final EIS, Chapter 12, Attachment C.

[22] FRA, in its Final Rule, estimated costs to upgrade 2-quadrant gates to 4-quadrant gates to be substantially greater. SEA has used its costs, which were unchallenged, from the Final EIS in this proceeding (see Chapter 12, Attachment C) for consistency and because FRA did not include cost estimates for other crossing upgrades.

[23] SEA notes that the Board imposed in the 2002 Decision conditions requiring construction of two grade-separated crossings in Rochester at various levels of rail traffic. As these separations may never be constructed should DM&E never transport the required amount of coal through Rochester, and it is not known which crossings would ultimately be selected for construction of the grade separations, SEA did not attempt to reduce the cost of SSMs at grade crossings in Rochester by eliminating two crossings from SSM requirements. SEA notes that even if rail traffic levels do not reach those necessary for construction of one or more grade separated crossings, Rochester

In developing this cost estimate, SEA recognizes that the installation of 4-quadrant gates at 27 road-rail crossings is likely far beyond what would actually be implemented should a quiet zone be established in Rochester and Chester, for the following reasons. First, substantial portions of the existing rail line through Rochester and Chester, and therefore numerous grade crossings, are located in non-residential areas, particularly west of the downtown area where the Mayo Clinic is located. In fact, only the crossings from 11th Avenue, N.W. to College View Road in Rochester and the crossings at 60th Avenue and Haverhill Road in Chester actually occur within or adjacent to residential areas. The other grade crossings are in commercial or light industrial areas, which would be less likely candidates for a quiet zone. Additionally, Byron, Minnesota, within which six of the grade crossings are located, has executed a negotiated agreement with DM&E.

SEA also estimated the cost of establishing quiet zones at only grade crossings within residential areas. This would include 12 crossings in Rochester (6 with flashing lights, 5 with gates, and one with passive protection) and 2 crossings in Chester (both currently with passive protection).[24] SEA estimated the cost for upgrades to 4-quadrant gates at these residential grade crossings to be approximately $636,400 for Rochester and $505,800 for Chester. In short, SEA estimates that the cost of installing 4-quadrant gates for Rochester and Chester could be as high as $2.5 million for all 27 crossings along this section of line and approximately $1.1 million for the grade crossings within actual residential areas of Rochester and Chester. These figures likely are conservative, as upgrades to 4-quadrant gates might not actually be required at all of the potentially affected road-rail crossings. In addition, should median barriers or road closures be used at some of these locations, these costs could be reduced.

may still desire to implement a quiet zone through the community.

[24] It appears to SEA that a quiet zone at least a half mile in length, the minimum distance allowed by FRA, could be established in Chester as a result of upgrades at these two crossings.

As requested by Olmsted County and Rochester, SEA has compared the cost of establishing quiet zones to other potential mitigation measures that could be used to address horn noise. The cost estimate for establishment of a quiet zone plainly would be significantly less than the estimated cost of construction of sound walls (nearly $19 million for Rochester alone)[25] or mitigating additional noise sensitive receptors (potentially costing over $6.9 million for Rochester).[26] Based on the safety and effectiveness concerns with sound walls discussed below and in the Draft SEIS (pages 2-12 to 2-13) and the fact that sound walls or other mitigation at specific noise sensitive receptors likely would be significantly more expensive, SEA concludes that pursuing the establishment of one or more quiet zones would be a reasonable and effective way to address concerns about horn noise in Rochester and Chester.

In developing SEA's final recommendations for this Final SEIS, SEA also investigated the applicable standards and requirements for funding the necessary improvements to establish quiet zones. Rochester commented that DM&E should be required, as mitigation for the project, to fund the necessary improvements to qualify for a quiet zone. To address this issue, SEA consulted informally with FRA to learn how the numerous communities now seeking to establish quiet zones under FRA's Final Rule are planning to fund the necessary grade crossing improvements. FRA indicated that funding for quiet zones is being sought from a variety of Federal, state, and local sources.[27] In one case FRA's representative noted, a single neighborhood in Springfield, Missouri has itself raised the funds to establish the quiet zone.[28] FRA pointed out that for none of the communities seeking quiet zones was a railroad contributing any funding to the effort. In several cases, FRA indicated, the communities and railroads had made arrangements for the railroads, under payment contract with the community, to

[25] See below in this chapter for a breakdown of this estimate.

[26] Based on an estimated 1,739 noise sensitive receptors being exposed to horn noise levels of 70 dBA Ldn at traffic levels of 37 trains per day (Draft EIS, Table 3.3-14) at a mitigation cost of $4,000 per receptor.

[27] Ron Ries, Federal Railroad Administration, Office of Safety, telephone discussion in August 2005.

maintain the SSMs.[29] Thus, unlike instances where railroads may contribute up to 10 percent of the cost to upgrade warning devices for safety reasons, railroads typically have not contributed any funding for crossing protection upgrades to establish quiet zones.[30]

In fact, FRA's Final Rule specifically states that the community or public authority (defined by FRA as "the public entity responsible for traffic control or law enforcement at the public highway-rail grade or pedestrian crossing") alone has the authority to pursue establishment of a quiet zone.[31] Therefore, while the community must notify the railroad and provide the railroad an opportunity to participate in the process,[32] it is the community's responsibility to fund and actually establish the quiet zone in consultation with FRA. In fact, establishment of a quiet zone can occur without the involvement of the railroad at all, should the railroad elect not to participate in the process.[33]

Based on its additional investigation of quiet zones and associated cost and funding issues, SEA has decided not to recommend requiring DM&E to provide funding for the establishment of quiet zones through Rochester and/or Chester or any other community. In SEA's view, quiet zones would appear to provide a cost-effective option for impacts from horn noise as a result of this project. However, FRA's Final Rule makes it clear that the community that is concerned about horn noise (and not the railroad) is responsible for the funding, establishment, and maintenance of quiet zones.

There is nothing unique about Rochester (or Chester) that would warrant deviation from SEA's practice of not recommending horn noise mitigation or the process established in the Final Rule.

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[28] Id.
[29] Id.
[30] Id.
[31] 49 CFR §222.37.
[32] 49 CFR §222.43.
[33] Id.

Rochester, although the largest community along DM&E's existing line, is not unique among communities through which rail lines pass. Numerous other communities along DM&E's existing rail line—as well as countless communities along other railroad lines throughout the country—are located adjacent to rail lines. It is not unusual for trains along these lines to go through residential areas or for the amount of rail traffic to increase. Indeed, as railroads have been successful at obtaining additional business and shippers have developed along rail lines in recent years, rail traffic on lines throughout the country has gone up substantially. SEA understands the concerns of many in the Rochester area about horn noise from increased train traffic as a result of this project. But recent traffic increases on other lines have exceeded those expected as a result of this project.[34] Also, while the world-renowned Mayo Clinic is located in Rochester, no Mayo Clinic facilities are located directly on the line. Rather, as indicated in the EIS, the closest Mayo Clinic facility is approximately 1,200 feet (2-3 blocks) from the rail line.

Absent the NEPA review associated with this case, DM&E would be free to increase its traffic on the line through Rochester and Chester at any time to any level, without authority from the Board or any mitigation to address potential increases in horn noise.[35] In SEA's view, the commenters have failed to show that DM&E should be required to fund the establishment of a quiet zone just because this project requires a license and a NEPA review from the Board. As previously noted, SEA is aware of no instance where a railroad has been required to fund a quiet zone or other horn noise abatement measures, even under traffic increases in excess of those anticipated as a result of this project. Moreover, FRA's Final Rule does not contemplate that railroads will provide funding for quiet zone improvements (and none in fact have apparently elected to do so). This is not a case where horn noise

[34] For example, as noted below, BNSF has increased rail traffic on one of its rail lines through Anaheim, California from approximately 12 trains per day to over 120 trains per day, an increase of over 100 trains per day. By contrast, the proposed project would increase rail traffic through Rochester from approximately 3 trains per day to a maximum of 37 trains per day, an increase of 34 trains per day.

[35] See, e.g., Detroit/Wayne County Port Authority v. ICC, 59 F.3d 1314 (D.C. Cir. 1995).

as a result of this project would result in potential adverse safety or vibration concerns at grade crossings or other locations in Rochester, Chester, or other communities on the existing line. Reducing or eliminating the sounding of horns will primarily benefit the community, not the railroad.[36] Additionally, residential neighborhoods in other communities on this line are as close to the DM&E line as those in Rochester and Chester. Finally, a variety of Federal, state, and local funding options are available to help communities establish quiet zones. For all of these reasons, SEA does not believe it would be appropriate to recommend to the Board that DM&E be made responsible for establishing or funding (in whole or in part) quiet zones through Rochester, Chester, or any other community on the existing line.

While SEA is not recommending that the Board impose quiet zone mitigation on DM&E, the financial burden of establishing or funding a quiet zone or zones would not necessarily fall on Rochester, Chester, or other communities on the existing line should one or more quiet zones be pursued. As noted earlier, FRA indicated to SEA that a variety of Federal, state, and local funding programs are available for quiet zones.[37] Additionally, if Rochester or Chester wants to pursue a quiet zone or zones, they might be able to develop a mutually acceptable negotiated agreement with DM&E, under which DM&E would voluntarily provide some financial assistance. Along the existing rail line, 51 of the 56 communities have entered into negotiated agreements with DM&E. Although FRA has indicated that other railroads are not currently funding the establishment of quiet zones, any agreement between Rochester and/or Chester and DM&E would be free to contain whatever mutually acceptable conditions the parties could agree to, including but not limited to, funding options for quiet zones. In short, a negotiated agreement between Rochester and DM&E could provide a more far-reaching solution to those communities' concerns about horn noise than what the Board (or FRA) would require.

[36] The mitigation in the Board's 2002 Decision adequately addresses all safety concerns related to grade crossings as a result of this project. See Draft SEIS, Appendix C, condition numbers 1 and 123.

[37] Ron Ries, Federal Railroad Administration, Office of Safety, telephone discussions in August, 2005.

It is worth noting that, in Mid States, when addressing the issue of funding for the grade separations in Rochester required by the 2002 Decision, the court found that because Rochester would benefit from the grade separations, "it is reasonable to expect entities other than DM&E [i.e., Rochester] to bear a substantial share of the costs" for these separations.[38] Similarly, SEA finds it reasonable that should Rochester (and/or Chester) be unable to secure other means for funding the establishment of quiet zones, consistent with FRA's Final Rule, Rochester and Chester, which would reap the benefits of quiet zones, should be responsible for their funding. Additionally, SEA points out that Rochester had offered to raise (subject to passage of a bond issue) $40 million for construction of a proposed rail bypass around the City. This amount, of course, far exceeds the funding that would be necessary for installation of SSMs at grade crossings in Rochester. Thus, it appears likely that Rochester could find the means to obtain sufficient funding to cover the cost of establishing one or more quiet zones through the community.

At the same time, SEA recognizes that FRA, in its Final Rule, contemplates (though it does not require) the involvement of railroads in the process of establishing quiet zones. In order to ensure DM&E's participation in this process, should Rochester, Chester or other affected communities decide to pursue a quiet zone as a result of his project, and to assist Rochester, Chester, or any other affected communities in identifying and pursuing funding options for quiet zones, SEA recommends that the Board revise condition 29 of the 2002 Decision in the following manner (added language is underlined):

> *Prior to initiation of construction or reconstruction activities related to this project, Applicant shall establish a Community Liaison(s) to consult with affected communities, farmers, ranchers, businesses, landowners, and agencies; to develop cooperative solutions to local concerns, be available*

[38] 345 F.3d at 545.

for public meetings; conduct periodic public outreach; and assist communities or other entities in establishing quiet zones. Such assistance may include coordination with FRA for identification of appropriate supplemental and alternative safety measures at grade crossings where quiet zones are desired; identifying potential sources of funding; providing assistance preparing funding applications and grant requests; and coordinating with representatives of potential lending organizations. The Community Liaison(s) shall have access to Applicant's upper management. Applicant shall provide the name and phone number of the Community Liaison(s) to mayors and other appropriate local officials in each community through which the new and existing rail line passes.

2.4.3 Negotiated Agreements

As noted above and in the Draft SEIS,[39] during the EIS process DM&E executed mutually acceptable negotiated agreements addressing local concerns with 51 of the 56 affected communities along its existing rail line. SEA recommended, and the Board imposed, a mitigation condition (condition Number 120) requiring DM&E to comply with these voluntary agreements. The existence of these agreements was one of SEA's reasons for not recommending specific mitigation for horn noise in the Draft SEIS.

Commenters, including Olmsted County, Rochester, and Mayo, contend that the negotiated agreements do not relieve SEA of responsibility to impose mitigation for horn noise. Additionally, they take the position that the existence of negotiated agreements for most of the other communities along DM&E's existing line does not mean that horn noise mitigation for Rochester and Chester is not

[39] Draft SEIS, Chapter 1, at pages 1-5 to 1-6.

warranted. Moreover, the provisions of the negotiated agreements, according to Rochester, should provide the basic level of mitigation, not the upper limit (ceiling) as SEA has seemed to indicate.

As detailed in the EIS, in an effort to address potential community concerns about potential project impacts—including horn noise—by more effective, and potentially more far-reaching means than mitigation the Board could unilaterally impose, the Board has long encouraged railroads to negotiate mutually acceptable agreements with affected communities and other government entities to address potential environmental impacts. Negotiated agreements may be made with neighborhoods, communities, counties, cities, regional coalitions, states, and other entities and may be designed to address a broad range of environmental issues, including concerns about issues that go beyond what the Board typically mitigates, such as horn noise. Consistent with the Board's typical practice, SEA indicated in the EIS that, if DM&E submitted any voluntary negotiated agreements it entered into with communities or other entities to the Board, the Board would then likely require compliance with the terms of any such agreements as environmental conditions in any final decision approving the proposed project. These negotiated agreements, SEA stated, typically would supersede any environmental conditions, including noise conditions, for that particular community or other entity that the Board would otherwise impose.

As previously noted, the Board has received negotiated agreements between DM&E and most of the communities along the existing rail line. The Board has long made it clear that it encourages these agreements because privately negotiated solutions between an applicant railroad and some or all the communities along a particular rail corridor can be more effective and more far-reaching than any mitigation options the Board could unilaterally impose. SEA disagrees with commenters' position that negotiated agreements should provide the basic level of mitigation because, if that were so, there would be no reason for communities and applicants to seek to work out mutually satisfactory solutions to the issues they face.

The issue of what role negotiated agreements are to play in the Board's process is not part of the court's remand in Mid States and will therefore not be addressed further as part of this Final SEIS. However, SEA would point out that in accordance with the process set out in the 2002 Decision the opportunity to negotiate a mutually satisfactory arrangement to replace local and site-specific mitigation imposed by the agency remains while this proceeding is pending before the Board on remand and would continue until the end of the Board's oversight process, should the Board again approve this project. Therefore, those communities that do not currently have a negotiated agreement with DM&E, including Rochester and Chester, are encouraged to pursue negotiated agreements with DM&E as a means to address local issues and concerns about the proposed project, including horn noise. A negotiated agreement with DM&E could provide a way for Rochester, Chester, and other affected communities to obtain more extensive mitigation for horn noise and other potential local impacts than what the Board would otherwise impose.

2.4.4 Grade Separations

In the Draft SEIS, SEA indicated that the grade separated crossings that would be required under the mitigation in the 2002 Decision in Rochester and Pierre, South Dakota would limit, somewhat, horn noise due to locomotives no longer being required to sound horns at these crossings. MNDOT, Olmsted County, and Rochester all commented that grade separations would not reduce horn noise in Rochester. According to the commenters, the proximity of grade crossings on both sides of the potential locations for construction of grade separated crossings, where trains would continue to sound horns, would either result in no reduction in horn soundings, or the reduction would be so minimal that no significant reduction in horn noise level would occur.

In response, SEA points out that the grade separation conditions were only one of multiple reasons why SEA indicated in the Draft SEIS that horn noise mitigation would not be recommended. Therefore, the potential effects of the required grade separations on horn noise should not be viewed in

isolation, but as part of a package. Moreover, while SEA continues to believe that some reduction in horn noise is likely as a result of the grade separations (construction of grade separated crossings would reduce horn soundings because horns would no longer be required at these crossings), it at no time indicated that the reduction in horn noise from the grade separations alone would be significant.

SEA recognizes that, like many other communities where DM&E or other railroads pass through residential areas, the grade crossings in Rochester are in close proximity, requiring (currently under state law and now under FRA's Final Rule) nearly continuous horn soundings. Accordingly, as discussed above, SEA believes the establishment of one or more quiet zones (with or without a negotiated agreement with DM&E) would be the most reasonable and effective way for Rochester and other concerned communities to achieve reduced horn noise. In the 2002 Decision, the Board imposed conditions requiring construction of a grade separated crossing in Rochester prior to DM&E transporting 20 million tons of coal annually through Rochester and additional grade separations in Rochester and Pierre prior to DM&E transporting 50 million tons of coal annually through these communities. As the EIS explains, these grade separation conditions were not imposed specifically for noise mitigation. Rather, they were intended primarily to facilitate the movement of emergency vehicles while trains pass within these communities. Nevertheless, in the Draft SEIS, SEA properly took note that, while not considered noise mitigation per se, the grade separated crossings in Rochester required by the 2002 Decision would also have the effect of reducing horn soundings to some extent.

2.4.5 Sound Walls

As part of its additional investigation into potential mitigation for horn noise in the Draft SEIS, SEA evaluated the potential for construction of sound walls along the existing rail line through residential areas. In declining to recommend sound walls for Rochester, Chester, and other communities along the existing rail line, SEA noted that construction of sound walls would be expensive (over $10.6 million, $5.8 million in Rochester alone). SEA further noted that sound walls would require continual expense

for maintenance, pose potential safety hazards, and that they might not be effective in reducing noise (Draft SEIS at pages 2-12 to 2-13).

Olmsted County, supported by Mayo, submitted extensive comments challenging SEA's evaluation of sound walls. Specifically, Olmsted County argues that sound walls would be effective and that the cost of sound walls would be less than the loss of property value that could result from increased train noise as a result of this project. Olmsted County further challenges SEA's determination that sound walls could present a safety hazard to trains, vehicles, and pedestrians, contending that sufficient space would be available in the existing rail line right-of-way to construct sound walls on both sides of the line that would allow safe passage for pedestrians or pets along the right-of-way between the sound wall and rail line. Olmsted County claims that SEA's concerns about sound walls obstructing sight lines for train and vehicle operators are unfounded, as current sight lines are already obstructed and therefore the further reduction in sight lines would be inconsequential. While Olmsted County did not provide any references or examples, it suggests that design alternatives for noise protection, safe sight lines, and minimal maintenance (graffiti-free) are available and should have been investigated by SEA. Olmsted County also indicates that the United States Department of Transportation (DOT) requires and constructs sound walls when noise levels from highway traffic affecting residential areas exceed 65 dBA, a level lower than SEA's mitigation level of 70 dBA L_{dn}.

SEA agrees with Olmsted County that, with or without sound walls in place, it is unlikely that a train traveling at 45-49 miles per hour, which requires a mile or more of distance to stop, could stop for a vehicle attempting to beat a train across a crossing or for a vehicle stopped over the rails at an intersection. However, this does not make the reduction in sight lines that would occur from sound walls in Rochester inconsequential. SEA's concern for sight lines is primarily for vehicles, not the trains themselves. Much as a large building or tall un-pruned/un-mowed vegetation obscures cross-traffic for a motorist approaching an intersection (known as a blind intersection), sound walls would do the same

to vehicles approaching a rail crossing. The driver would have to approach very close to the actual crossing to see down the tracks and determine if a train was approaching. By approaching close to the intersection, the driver would run the risk of not braking in time to stop for an oncoming train. Opening the sound walls wider at road crossings would reduce these concerns. But wider openings in the sound walls would allow more noise to escape and reduce the effectiveness of the sound wall.

Contrary to Olmsted County's claims, SEA appropriately raised concerns about pedestrian safety in the area between the sound wall and rail line in the Draft SEIS. Pedestrians are not supposed to be in a railroad right-of-way, and, if they happen to trespass and find themselves there (as is not recommended), they are in potential danger from passing trains, flying debris, or other rail related activities. Simply because sufficient space exists within the right-of-way for a person to stand off the rail line without being directly struck by a train does not mean it is a safe environment for pedestrians. In short, SEA continues to be concerned that pedestrians along the right-of-way would have no means to quickly exit the right-of-way while a train is passing should sound walls be constructed.

SEA agrees with Olmsted County and Mayo that sound walls can be effective when used in the appropriate environment. However, as SEA explained in detail in the Draft SEIS, sound walls would have questionable effectiveness if used in Rochester and other communities where numerous openings in the sound walls would be necessary for road crossings. As discussed previously, sound walls work by absorbing or reflecting sound waves (noise). Openings in the sound walls, however, would allow noise to escape and not be reflected or absorbed by the wall. SEA has been unable to find any instances where sound walls have been constructed with numerous openings, and commenters have failed to provide any examples of this either. The typical application is along highways or rail lines where continuous walls with no openings are constructed between residential areas and noise sources.

While Olmsted County and Mayo acknowledge that sound walls would be expensive, they have contended that the cost of sound walls would be significantly less than the losses in property value or the cost of insulating the thousands of additional noise sensitive receptors that would be adversely affected by horn noise as a result of this project. Therefore, Olmsted County and Mayo argue that SEA should recommend that the Board require DM&E to construct sound walls should SEA not recommend mitigation for additional noise sensitive receptors. On its own, the cost to DM&E for construction of sound walls, estimated to be over $10.6 million for the five communities without negotiated agreements, including over $5.8 million for Rochester alone, may not appear significant for a project that has been estimated to cost as much as $2 billion. However, in the 2002 Decision the Board already imposed an unprecedented level of mitigation for this project, estimated to cost up to $140 million, including extensive mitigation for Rochester.

The commenters have not presented evidence showing that the substantial additional cost of sound walls would be warranted in this case. For the Draft SEIS, SEA used cost figures provided previously by Rochester to estimate the potential cost of imposing sound walls. In conducting additional evaluation of sound walls for this Final SEIS, SEA has determined that sound walls appropriate for addressing horn noise in this case would likely cost over three times the cost estimated by Rochester, approximately $750 or more per linear foot versus the $230 per linear foot estimated by Rochester.[40] Under these circumstances, the cost to construct sound walls through Rochester alone would be nearly $19 million. Requiring sound walls in the other communities without negotiated agreements would increase the cost an additional $15.7 million, for a total cost in excess of $34 million, easily exceeding

[40] A recent 2.44-mile sound wall project along the BNSF rail line in Anaheim, California is estimated to cost over $13.5 million, over $1,000 per linear foot. For that project, which was done in response to a projected increase in freight rail traffic from approximately 12 trains per day to over 128 trains per day, funding was obtained solely from federal, state, and local sources – BNSF did not contribute any funds for the proposed project. See www.anaheim.net.

the single-most expensive mitigation item imposed in the 2002 Decision.[41] SEA continues to believe that recommending such costly mitigation in light of concerns about the safety and effectiveness of sound walls in residential areas with numerous opening for grade crossings, as discussed above would be inappropriate and unduly onerous to the Applicant, which is already responsible for about $140 million in mitigation costs under the 2002 Decision.

Lastly, as SEA noted in the Draft SEIS,[42] sound walls would require continual maintenance during operation and to counter potential vandalism, including graffiti. These costs are difficult to estimate but would add additional financial burdens for DM&E, the community and adjacent residents. Olmsted County has suggested that SEA's concerns related to maintenance are unfounded, as graffiti-proof materials could be used, which would reduce maintenance costs. In response, SEA consulted sound wall manufacturers for more information on maintenance and vandalism. SEA was told that sound wall manufacturers employ various means to discourage graffiti and other vandalism, including the use of appropriate surface textures and coating on the walls to reduce the effectiveness of graffiti. However, according to the manufacturers SEA contacted, no materials have yet been developed that are immune to graffiti. While modern materials and coatings may make it more difficult to apply graffiti or easier to remove it than it was in the past, sound walls simply are not graffiti proof. Thus, regardless of what materials, textures, or coating would be used as part of any sound walls developed for this project, the cost of maintenance of the sound walls, and the associated costs to DM&E, the community and adjacent residents, could be significant.

[41] For comparison, in the Final EIS, grade crossing protection upgrades along the existing rail line and new installations along the new rail construction were estimated to cost approximately $5.5 million for the entire project; grade separations in Rochester were estimated to cost $13 million; and re-vegetation, fencing and cultural resources mitigation for the entire project (about 900 miles) were estimated at approximately $13 million, $11 million, and $6 million, respectively. Although not specifically imposed by the Board but required as part of the Clean Water Act Section 404 permit from the Corps of Engineers, a cooperating agency, mitigation for impacts to wetlands across the three project states of Wyoming, South Dakota and Minnesota was estimated to cost $20 to $39 million.

[42] Draft SEIS, Chapter 2, at page 2-13.

In short, SEA is not recommending that sound walls be imposed as mitigation for horn noise in light of the safety concerns for motorists, train crews, and pedestrians; questions regarding the ultimate effectiveness of sound walls; and significant costs associated with sound wall construction and maintenance.

2.4.6 Property Values

Olmsted County's comments on the Draft SEIS express concern for the loss of property value to residences along the existing rail line as a result of the increased number of trains and increased horn noise that would result from this project. While property values were not part of the court's remand in Mid States and alleged decreases in property values as a result of this project, therefore, are not an issue in this SEIS, Olmsted County's comments indirectly apply to the horn noise issue. Accordingly, the issue will be briefly discussed in this chapter.

Specifically, SEA, in the Draft SEIS, cited cost as one reason for not recommending horn noise mitigation. Olmsted County commented that, based on its projections for the decline in property values along the rail line that allegedly would result from this project, the additional $1,000 to $4,000 it would cost DM&E to mitigate each noise sensitive receptor that would be affected by horn noise would be significantly less than the loss in property values to adjacent residences. As such, Olmsted County reasons, it would be cheaper to implement additional mitigation for horn noise to individual noise sensitive receptors than to compensate property owners for lost property value.

SEA has reviewed the comments submitted on the property values issue and appreciates the commenters' participation in the environmental process. Nevertheless, SEA is not conducting additional evaluation of the issue of property values as part of the SEIS because SEA's analysis of the potential effects of this project on property values is not one of the issues now before the Board on remand. In any event, SEA notes that the mitigation cost to address horn noise impacts to individual noise sensitive

receptors, even if significantly lower than Olmsted County's estimated reductions in property value, would be costly. Regardless of how these mitigation costs would actually compare to potential reductions in property values, there is no question here that horn noise mitigation would be both expensive and a departure from consistent agency precedent. For all the reasons discussed above, the commenters have not shown that horn noise mitigation is appropriate or warranted.

2.4.7 I&M Rail Link Routing

Olmsted County, Rochester, Mayo and several citizens commented that SEA should evaluate as part of the SEIS the potential impacts, including noise, of routing coal trains over the I&M Rail Link (IMRL) rail line. The commenters point out that following the Board's 2002 Decision in this case, DM&E acquired the IMRL, which included rail trackage between Owatonna, Minnesota, and Chicago, Illinois, as well as Kansas City, Missouri. DM&E had applied to the Board for authority to construct and operate a connection with the IMRL (abbreviated as the I&M in the EIS) at Owatonna, Minnesota to facilitate this interchange.

Commenters argue that DM&E's acquisition of the IMRL in 2002 is a changed circumstance, which allegedly has now given DM&E an alternative routing for unit coal trains that was neither available nor evaluated during the EIS process. DM&E had indicated in its 1998 Application that it would likely interchange coal traffic with IMRL in order to serve coal-burning power plants, particularly through Chicago, an area that DM&E did not reach directly. However, the commenters note, DM&E's acquisition of the IMRL line means that the IMRL line would now be under DM&E's direct control, not under the control of another railroad. Because the IMRL system would provide DM&E access to the Chicago Gateway without the need to interchange with other railroads, the commenters believe the IMRL line could represent a more logical routing for unit coal trains bound for Chicago and other more easterly markets than the alternative through Rochester, which was considered in detail in the EIS. Therefore, the commenters argue, SEA should now evaluate the impacts, including those from horn

noise, of using the IMRL routing, compare these impacts to the impacts of routing unit coal trains along the existing rail line through Rochester, and require DM&E to route trains over IMRL, and not through Rochester, if the IMRL routing is found to have fewer impacts.

Horn noise (and whether SEA should recommend mitigation for it) is only peripherally related to the IMRL issue. Therefore, those interested in the IMRL issue are directed to SEA's thorough discussion of that issue in Chapter 6 of this Final SEIS.

2.4.8 Environmental Justice

In the EIS, SEA conducted an extensive evaluation of the potential adverse impacts to minority and low-income, so-called environmental justice communities. During the EIS process, SEA identified a number of environmental justice communities along the existing rail line.[43]

SEA's environmental justice methodology was challenged and upheld in Mid States.[44] Thus, the environmental justice analysis in the EIS is not one of the issues now before the Board on remand.

Nonetheless, in its comments on the Draft SEIS, Olmsted County again raises the same complaints about SEA's environmental justice methodology that the court previously rejected. Olmsted County does so by intertwining the environmental justice issue with its argument that horn noise mitigation is needed here. Specifically, Olmsted County contends in its comments that circumstances have changed dramatically since the EIS was prepared and that over the last 15 years Rochester's population, including low income and minority persons, has increased significantly. Olmsted County

[43] Final EIS, Chapter 3, pages 3-77 to 3-82; Chapter 4, pages 4-13 to 4-18; Chapter 5, pages 5-62 to 5-64; Chapter 6, pages 6-17 to 6-19; Chapter 7, pages 7-64 to 7-66; and Chapter 9, pages 9-78 to 81.

contends that, therefore, as part of its horn noise analysis, SEA should re-evaluate, using the methodology formerly proposed by Olmsted County, the potential implications of the project on environmental justice communities. Such an analysis is necessary, according to Olmsted County, in order for SEA to accurately assess the potential horn noise impacts of the project on low income and minority communities. These impacts include the increase in horn noise itself and the decline in property values, which, according to Olmsted County, would be more significant to low income and minority residents. And when considering the potential costs of horn noise mitigation as a factor in deciding whether to recommend such mitigation in the Final SEIS, Olmsted County states, SEA should weigh the cost from horn noise if there is no horn noise mitigation, primarily in lost property values, to environmental justice communities.

As noted above, SEA's environmental justice methodology and evaluation (including an analysis of the impacts to property values, discussed previously) were upheld by the court in Mid States and are not before the Board on remand. Also, proceedings would never come to an end if agencies were required to redo analysis every time some new circumstances have arisen, some new trends have been observed, or some new facts have been discovered. Therefore, SEA will conduct no additional evaluation of the environmental justice issue. SEA has reviewed and acknowledges Olmsted County's comments but concludes, for the reasons discussed above and in Chapter 6 of this Final SEIS, that the environmental justice analysis in the EIS was fully adequate and that there is no need to redo any of the environmental justice analysis on remand.

2.4.9 Past Precedent

In declining to recommend in the Draft SEIS any additional mitigation to address train horn noise, one of the factors SEA relied on was that the Board has never imposed mitigation for horn (as

[44] 345 F.3d at 541.

opposed to wayside) noise. Rochester, Mayo, and the Eastside Pioneer Neighborhood Association commented that the Board has never had a case like this before. They suggested that, therefore, past precedent should not influence the Board's decision on whether to impose horn noise mitigation in this case.

SEA points out that agencies properly follow their own established precedent in subsequent cases. Agencies have broad discretion to establish, in undertaking environmental reviews required by NEPA, the policies and procedures that they will use in conducting environmental analyses. Similarly, agencies also have broad discretion in determining the types and levels of mitigation that they will impose, consistent with their governing statute. So long as the circumstances presented by a subsequent case are similar, it is entirely reasonable for agencies to follow their past precedent when deciding the approach to use for future cases.

In this particular case, SEA sees no reason to depart from its past precedent of not recommending mitigation for horn noise. For SEA to recommend that the Board depart from its long-standing and consistent precedent, there would have to be unique circumstances that warrant specific mitigation for horn noise in Rochester. But there are none. As explained earlier, the horn noise issues in Rochester are not unique. Residential areas along the existing rail line in Rochester are similar to residential areas along rail lines throughout the country. Residences are not closer to the rail line in Rochester than in many other communities along DM&E's existing line and the lines of other railroads around the country. In addition, the impacts to residences in Rochester from the horn noise that would result from increased rail traffic if this project is constructed and implemented, while significant, would be no different than the noise impacts to residences along any other rail line experiencing substantial increases in rail traffic where the rail line goes through residential areas. Given the fact that the quiet zone process is now available under FRA's Final Rule (with or without a negotiated agreement) and the

problems with all of the horn noise mitigation options that have been suggested for this case, SEA finds no reason to depart from its precedent of not recommending specific mitigation for horn noise.

2.5 SEA'S FINAL RECOMMENDATIONS

SEA has given careful consideration to the 14 horn noise-related comments on the Draft SEIS and has conducted a thorough review and additional evaluation of its preliminary determination presented in the Draft SEIS not to recommend horn noise mitigation. Based on its additional review in light of the comments, SEA again determines that it would be inappropriate to recommend that the Board impose new mitigation conditions designed to address potential horn noise impacts. As discussed above, SEA's decision not to recommend horn noise mitigation, or recommend that the Board require that DM&E establish or fund a quiet zone or zones, is based on a number of factors, including the following:

- Safety is of paramount importance to SEA and the Board.
- Train horn soundings are a safety issue regulated by FRA.
- FRA's Final Rule establishing train horn sounding regulations and procedures to establish quiet zones now provides all of the communities affected by this project the opportunity to eliminate or reduce train horn soundings without compromising safety so that it would not be appropriate for the Board to impose any measures adopting its own standards for when locomotive horn soundings should take place.
- Under FRA's Final Rule, implementation of quiet zones and the installation and maintenance of SSMs and ASMs necessary to establish quiet zones, including the funding of such measures, is the responsibility of the community, not the railroad.
- Rochester and Chester are not unique in their concern about horn noise or the nature and extent of the potential impacts from horn noise due to increased rail traffic.

Accordingly, SEA sees no reason to depart from the Board's consistent practice, which is not to impose mitigation for horn noise.

- FRA's Final Rule makes it clear that individual communities, not railroads, have funded measures to reduce horn noise through the establishment of quiet zones, so that imposing such costs on DM&E would be contrary to FRA's precedent.
- Here, the grade crossing improvements that would be necessary to establish a quiet zone are not needed for safety reasons (given the extensive grade crossing mitigation in existing condition numbers 1 and 123), so that it would not be appropriate to require DM&E to pay the cost.
- Funding for quiet zone improvements would not necessarily be the sole responsibility of the community, as funding for grade crossing safety improvements and safety is available from a variety of federal, state, and local sources.
- Numerous agreements negotiated between communities along the existing rail line and DM&E are in place to address the concerns of most of the local communities along the existing line.
- Rochester and Chester (and the other communities without negotiated agreements) are free to develop their own mutually acceptable agreements with DM&E to address the community's specific issues and concerns at any time while this case is before the Board.
- The Board has never imposed mitigation for horn (as opposed to wayside) noise, so that doing so here would depart from the Board's consistent approach, in rail merger and construction cases, of only mitigating wayside noise.

- Cost—given the broad geographic scope of this 900-mile project (including both the new and existing line) and the large number of potential noise receptors—requiring DM&E to mitigate the thousands of sensitive noise receptors potentially affected by horn noise by means such as insulation, sound barriers, or air conditioning to reduce the need to open windows for ventilation, would be extremely costly.
- Sound barriers, particularly on both sides of the rail line, would themselves create potential safety hazards.
- Sound barriers might not be effective, as numerous road crossings in Rochester and the other communities at issue here would create openings in the barriers, which would allow sound to escape.
- In many locations sound barriers would be constructed along the backyards of adjacent residences. These walls would create a significant, permanent visual component in these areas. Maintenance and potential vandalism (particularly graffiti) would create ongoing concerns and cost issues for DM&E, the community, and adjacent residents.
- Sound barriers would create significant visual obstructions to motorists and locomotive engineers when approaching grade crossings, preventing motorists from seeing approaching trains and engineers from seeing traffic at grade crossings until nearly at the crossing, and leaving insufficient time for vehicles or trains to slow or stop to avoid collisions.
- Portions of an existing bike/walking trail in Rochester would likely have to be relocated onto private property adjacent to the rail right-of-way to avoid location between sound barrier walls.
- The installation of the grade crossing improvements and the grade separated crossings that would be required in Rochester and Pierre, under the Board's current mitigation, would reduce horn noise to some extent.

- As indicated in the EIS, because many of the noise sensitive receptor locations with substantial horn noise would also experience wayside noise levels of L_{dn} 70 dBA or higher, they would be eligible for noise mitigation under the Board's 2002 Decision.
- DM&E would not reach its full operational level of 100 million tons of annual coal transportation for several years after coal operations begin. Moreover, several alternative interchange locations along DM&E's existing system would allow interchange of coal traffic with other carriers at a variety of points so that, even at the full 100-million-ton level, some communities, especially those further east, might never experience the full level of 37 trains per day and associated levels of noise, including horn noise.
- The Board has already imposed more mitigation here than in any other rail construction case (147 separate conditions, including 11 addressing noise, at a total estimated cost of as much as $140 million) and imposing any additional cost on DM&E for noise mitigation is not warranted in this case.

Therefore, based on SEA's evaluation of horn noise mitigation issues as part of this SEIS, SEA is not recommending any new mitigation measures to address adverse impacts from train horn soundings, beyond those already recommended and imposed in the 2002 Decision. SEA, however, emphasizes that with FRA's Final Rule, communities now have a safe and effective way to address horn noise. SEA believes FRA's Final Rule provides the best opportunity for Rochester, Chester, and other communities along DM&E's existing rail line to address potential horn noise impacts. As part of its Final Rule, FRA contemplates the involvement of railroads in the process of establishing quiet zones, although the railroad is not required to pay for the installation or maintenance of grade crossing protection measures needed to establish a suitable quiet zone. In order to ensure DM&E's participation in this process, should Rochester, Chester or other affected communities decide to pursue a quiet zone as a result of this project, and to assist Rochester, Chester, or any other affected communities in

implementing a quiet zone(s) and pursuing funding options for quiet zones, SEA recommends that, if the Board decides again to approve this project, it should revise condition Number 29 to require, among other functions, DM&E's community liaison(s), to assist communities or other entities in establishing quiet zones; coordinating with FRA to identify appropriate SSMs and ASMS; identifying potential funding sources; providing assistance preparing funding applications and grant requests; and coordinating with representatives of potential funding organizations.

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